Claims

1. A scanning apparatus for scanning information in an information carrier (16) comprising a plurality of layers for storing data on a material capable of generating an excited radiation when interacting with an exciting beam (13) produced by an exciting source (11), said apparatus comprising an objective lens (15) for projecting the exciting beam in a layer of the carrier and collecting the excited radiation, said objective lens having a lens numerical aperture, and a detector unit (19) for detecting the excited radiation collected on the objective lens, the scanning apparatus being further characterized in that the exciting beam has a numerical aperture lower than the lens numerical aperture.

2. A scanning apparatus as claimed in claim 1, wherein the lens numerical aperture is between 0.5 and 1.

3. A scanning apparatus as claimed in claim 2, wherein the numerical aperture of the exciting beam is between 0.4 and 0.7.

4. A scanning apparatus as claimed in claim 1, further comprising an optical assembly between the exciting source and the objective lens, for decreasing the numerical aperture of the exciting beam.

5. A scanning apparatus as claimed in claim 4, wherein the optical assembly is a dichroic mirror (14) designed for decreasing the numerical aperture of the exciting beam.

6. A scanning apparatus as claimed in claim 4, wherein the optical assembly is an aperture (60) for reducing a diameter of the exciting beam.

7. A scanning apparatus as claimed in claim 4, wherein the exciting source is a laser diode and the optical assembly comprises a collimator lens (12).

8. A scanning apparatus as claimed in claim 6, wherein the optical assembly further comprises a beam expander (70).